RARE GAS-HALOGEN EXCIMER LASERS WITH BAFFLES

Abstract of the Disclosure

An excimer laser comprises a gas chamber, electrodes for creating rare gas/halide molecules that disassociate and produce optical emission, and reflective surfaces that form an optical resonant cavity. The excimer laser further comprises flow control surfaces that define gas flow paths and that control the flow of gas within the chamber. Preferably such flow control surfaces direct the gases away from the laser optics. More preferably, the flow control surfaces shield the path of the laser beam, at least in the proximity of the laser optics, from contaminants in the gases. Less contaminants yields less contamination of the laser optics. As a result, the laser device becomes more reliable and useful over longer periods of time. In addition, the laser gases are preferably exposed only to compatible materials that react with the laser gases to produce stable reaction products having a low vapor pressure, so as to reduce contamination of the gases and the optics. High-purity nickel is preferred for components that are electrically conductive, and high-purity alumina is preferred for components that are non-electrically conductive. Preferably, incompatible materials are not used.